December 4, 2020

The Honorable Chair and Members of
the Hawai'i Public Utilities Commission
465 South King Street, #103
Honolulu, Hawai'i 96813

Dear Commissioners:

Subject: Docket No. 2019-0323
Instituting a Proceeding to Investigate Distributed Energy Resource Policies
Hawaiian Electric's Status Update Filing

In accordance with Order No. 37421, *Approving the Parties' Request to Amend the Procedural Schedule*, issued on November 5, 2020 in the subject proceeding, Hawaiian Electric[1] respectfully submits its Status Update in this proceeding.

Sincerely,

/s/ Kaiulani Shinsato

Kaiulani Shinsato
Director
Customer Energy Resources Programs

[1] Hawaiian Electric Company, Inc., Maui Electric Company, Limited, and Hawai'i Electric Light Company, Inc. (collectively referred to herein as "Hawaiian Electric") are each doing business as "Hawaiian Electric" and have jointly registered "Hawaiian Electric" as a trade name with the State of Hawaii Department of Commerce and Consumer Affairs, as evidenced by Certificate of Registration No. 4235929, dated December 20, 2019.

# DER Policies Proceeding – Status Update

## Introduction

In accordance with Order No. 37421, *Approving the Parties' Request to Amend the Procedural Schedule* ("Order 37421"), issued on November 5, 2020 in Docket No. 2019-0323, Hawaiian Electric[1] hereby submits its Status Update in this proceeding. Order 37421 approved the Parties'[2] stipulation filed on October 15, 2020 to amend the procedural schedule, including a procedural step for the Company to file a Status Update in the Program Track. In addition, on April 3, 2020, the DER Parties[3] filed a letter to the Commission in this proceeding ("4-3-20 Letter")[4] concerning proposed near-term measures to expedite the Company's interconnection process. As directed by Order 37421, the Company includes status updates on all of these measures because it is expected that their continuation, and the launch of an additional measure, will significantly streamline the interconnection process. Accordingly, herein, the Company is addressing the following in this Status Update:

Section I: *DER Parties' Five Proposals (including Preapproval Pilot)*

Section II: *Program Track Update (including Rooftop Rental Demonstration and Programmatic Grid Service Options)*

[1] Hawaiian Electric Company, Inc., Maui Electric Company, Limited, and Hawai'i Electric Light Company, Inc. (collectively referred to herein as "Hawaiian Electric" or the "Company") are each doing business as "Hawaiian Electric" and have jointly registered "Hawaiian Electric" as a trade name with the State of Hawaii Department of Commerce and Consumer Affairs, as evidenced by Certificate of Registration No. 4235929, dated December 20, 2019.

[2] The "Parties" to this proceeding are Hawaiian Electric, the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs ("Consumer Advocate"), Distributed Energy Resources Council of Hawaii ("DERC"), Hawaii PV Coalition ("HPVC"), and the Hawaii Solar Energy Association ("HSEA").

[3] DERC, HPVC, and HSEA are collectively referred to as the "DER Parties."

[4] DER Parties' "Request for Expedited Relief During the COVID-19 Crisis," filed on April 3, 2020 in Docket No. 2019-0323.

As discussed in Section I, the Company initiated and has implemented four of the five measures requested by the DER Parties in their 4-3-20 Letter, specifically with regard to: improvements to the residential service upgrade process; early meter swaps upon conditional approval; and allowing the activation of temporary second meters for Customer Grid Supply Plus ("CGS+") customers.[5] The Company further clarifies that it will be making these changes to its internal processes permanent. With regard to the DER Parties' proposal for a six-month plan to expand interconnections, the Company is developing a Preapproval Pilot that is slated to be launched in January 2021, as detailed further below. With regard to the DER Parties' proposal for early activation of systems with sizes of 25 kW or less, the Company intends on continuing this process improvement until May 2021; however, the Company intends to collect data that will enable the Company to more effectively determine whether, and the degree to which, it is successful, and whether any additional modifications should be implemented.

Order 37421 requires the Company to include updates on how Party feedback has been incorporated into the development of the demonstrations the Company plans to begin in 2021, to streamline interconnections and test new grid service offerings. The Company notes, in response to Order 37421, the Rooftop Rental Demonstration and Programmatic Grid Service Options discussed in Section II can both incorporate additional grid service offerings. Moreover, consistent with the Commission's March 24, 2020 statement regarding COVID-19, all of these new initiatives are geared towards helping customers have access to renewable energy to better manage their electricity bills through COVID-19, and supporting economic recovery by increasing renewable projects, investments, and jobs in Hawai‘i.

[5] *See Parties' Responses to the Commission's Request for Update*, filed on November 25, 2020 in Docket No. 2019-0323, at 3.

## Section I: DER Parties' Five Proposals

This section provides an update on the Company's implementation and evaluation of the DER Parties' five proposals in their 4-3-20 Letter seeking certain forms of relief during and after the COVID-19 pandemic. As discussed in the Company's latest update filed on August 3, 2020,[6] since the Commission issued its March 24, 2020 statement acknowledging the gravity of the COVID-19 outbreak, and the DER Parties filed their 4-3-20 Letter, the Company's intentions and plans have always been to help customers and the solar industry through COVID-19. As discussed in its 8-3-20 Letter, the Company has already implemented four out of five of the DER Parties' proposals allowing customers to realize the benefits of clean renewable energy sooner. The Company committed to implementing most of these improvements on an interim, six-month basis, which ended in November 2020. In this filing, the Company is providing updates on the continuation of these improvements, which are all expected to significantly streamline the interconnection process.

In response to the DER Parties' fifth proposal, the Company has developed a plan to rapidly expand and streamline interconnections in the form of a Preapproval Pilot. The Company proposed a draft program design to solicit input from the Parties and continuously iterated on that design based on feedback received through multiple brainstorming and problem-solving discussions with the Parties.

The following provides a more detailed update on each of the five proposals from the DER Parties.

[6] *See* Letter from the Company to the Commission, filed on August 3, 2020, in Docket No. 2019-0323 ("8-3-20 Letter").

### 1| Early Energization of Systems Less Than 25 kW When Building Permit Is Closed and System Has Activated Volt-Watt

In Hawaiian Electric's letter filed on May 6, 2020,[7] the Company agreed to this proposal as follows:

> As requested by the DER Parties, the Company agrees to allow systems smaller than 25 kW, with volt-var and volt-watt inverter functions turned on, to be activated upon installation; provided that all applicable building permits have been closed. It is important to note, and customers must be informed, that if applicable, the appropriate net meter must be installed prior to energization to ensure proper tracking of system's operation.[8]

This improvement was implemented on May 11, 2020 on a six-month basis. After implementation, the Company listened to feedback from a solar contractor indicating that there is a significant delay in the completion of the building inspection after the electrical inspection is completed. Based on this feedback, the Company agreed to further modify implementation of this proposal by removing the requirement that all applicable building permits are to be submitted for early energization. The Company now requires that only the electrical inspection must be closed prior to early energization if all other conditions of the proposal are met. This should additionally accelerate the energization process for customers.

However, it is unknown to the Company when exactly the customer's electrical and/or building inspection is completed. The Company also lacks visibility as to when a customer ultimately energizes their system, i.e., there is currently no feedback loop to the Company when contractors turn customers' systems on. Consequently, the Company recommends that the early activation proposal as currently implemented be offered for an additional six months, at which point the Company will assess whether to continue, discontinue or modify the process. The DER

[7] *See* Letter from the Company to the Commission, filed on May 6, 2020, in Docket No. 2019-0323 ("5-6-20 Letter").
[8] 5-6-20 Letter at 6.

Parties have already shared that they have heard anecdotal, positive customer feedback regarding this process change. However, the primary driver behind a six-month continuation is to coordinate with the DER Parties to collect data that clearly identifies whether, and to what degree, this process change results in customer benefits and accelerates the energization timeline. This evaluation will help inform whether any additional improvements should be made to the process if it is continued.

The secondary driver for an additional six months is to monitor solar installer compliance to complete the interconnection application under the program rules after systems are installed. An important post-installation process step in the interconnection process is the validation step, where the Company reviews and evaluates the system in accordance with Rule 14H, rules specific to the DER program to which the customer applied, and the customer's submitted application that was initially granted conditional approval. Most importantly, as part of validation, the Company verifies that the project enabled Advanced Inverter functions and settings, such as Volt-Watt. In the Company's experience, requiring and/or encouraging retroactive compliance is challenging. As such, the Company seeks to ensure that non-compliance is not a significant issue resulting from this process. Thus, the Company would use the additional six months to track projects that elected to participate in early energization to evaluate factors such as: contractors executing their agreements in a timely manner; contractors returning to projects to fix non-compliance issues found during validation; and contractors' general compliance with programmatic rules.

### 2| Revenue Meter Changeouts Upon Conditional Approval

In the Company's 5-6-20 Letter, the Company agreed to this proposal as follows:

> The Company continues to propose to expedite the changeout of customer revenue meters upon issuance of conditional approval of a customer's application, instead of at the end of the interconnection

> process, and believes it can offer this process improvement on a permanent basis.[9]

This improvement was implemented on May 11, 2020 on a permanent basis. The Company intends to continue this improvement on a permanent basis. When this change was first implemented, the Company experienced resource challenges in working through all the customers for whom the Company committed to swapping their meters. In order of priority, these included customers who were in validation stage, customers who were on contractors' priority lists, and customers who had been conditionally approved, totaling over 2,000 customers. The Company was able to supplement resources to support this process and gradually work through the queue. The Company continues to look for ways to ensure the process brings value to customers as intended and recognizes that more improvements can be made. For example, similar to the discussion above where there is currently no feedback loop to the Company as to when a customer's system is energized, there is currently no step in the process that notifies contractors when customers' meters are changed. The Company seeks to work with the DER Parties to build more two-way transparency into these steps in the process.

### 3| Activation of Temporary Second Meter in CGS+ Production Meter Sockets

In the Company's 5-6-20 Letter, the Company agreed to this proposal as follows:

> As requested by the DER Parties, the Company proposes to allow contractors to install a temporary second meter (i.e., a UL-approved Form 2S 4-Jaw Class 200-rated electric meter) for CGS+ systems; provided that, upon its installation of the temporary meter, the contractor sends a picture of the temporary meter installation (including surrounding equipment and voltage readings) to the Company. The Company will thereafter at its convenience remove and replace the temporary meter with a utility-owned production meter, leaving the temporary meter at the customer's premises in a sealable bag provided by the contractor for later retrieval by the contractor and/or customer. During the April 28 Status Conference, the DER Parties stated its original proposal did not intend to hold

[9] *Id.* at 7.

> the Company responsible for loss or damage in connection with its participation in this arrangement. Consistent with this position, the Company would require that each contractor utilizing this temporary second meter option sign a Waiver and Hold Harmless Agreement (substantially in the form attached hereto as Attachment 4) that releases and indemnifies the Company against any and all liability for this temporary meter arrangement.[10]

This improvement was implemented on May 11, 2020 on a six-month basis. Following further evaluation of this proposal and dialogue with the DER Parties, the Company no longer requires that the contractor install a temporary second meter for CGS+ systems on O'ahu; instead, contractors can more simply utilize a jumper socket cover for the second meter. The Company recommends that this process change continue. However, the Company reserves the right to later modify or discontinue this process change if it discovers unanticipated adverse issues or impacts to customers, safety or reliability.

### 4| Improvements to Residential Service Upgrade Process

In the Company's June 10, 2020 status update to the Commission,[11] the Company discussed near-term improvements that would be implemented to the residential service upgrade process effective June 15, 2020, including, but not limited to:

- Placing additional visibility, tracking, and focus on simple overhead work for PV customers, to bring the lead time down for the Cost and Requirements Letter from three to four weeks to two to three weeks;
- Similarly, for the Execution step of the process, bringing the lead time down from two to four weeks to one to three weeks;
- Providing an online form to start the service request process; and

[10] *Id.* at 7-8.
[11] *See* Letter from the Company to the Commission, filed on June 10, 2020, in Docket No. 2019-0323 ("6-10-20 Letter").

- Providing one point of contact in the Company to whom contractors can escalate complaints.[12]

In implementing these process changes, efforts initially were focused on customers who had received conditional approval to build their systems. However, in discussions with the DER Parties, the Company learned that many service requests are submitted prior to conditional approval. Thus, in order to better address priority needs for PV customers while also balancing workload for non-PV customers, the Company now asks contractors to regularly provide lists of priority customers that need expedited attention. This is a temporary fix while the Company continues to redesign the processes and implement system changes for all service requests. The Company will continue these process improvements for long-term solutions and collaborate with the DER Parties to find any additional near-term improvements.

In the Company's 6-10-20 Letter, the Company also explained that the residential service upgrade process recently moved to Customer Service, and that a primary objective of Customer Service going forward will be to reassess the end-to-end new service and service upgrade process, with the goal of reducing customer wait times, improving customer satisfaction and improving cost-effectiveness.[13] Since the filing of the Company's 6-10-20 Letter, the Company has process mapped the entire end-to-end process for residential overhead PV upgrades (simple service) and standardized it across all three Companies. In doing so, the Company focused on the customer's experience throughout the process, identifying efficiencies, and adopting best practices. The new and improved process was operationalized Company-wide on November 2, 2020. In a second phase of process improvement for the new service and service upgrade

[12] *See id.* at 7-8.
[13] *See id.* at 9.

process, the Company will focus on improvements for more complex transactions, e.g., for commercial customers.

### 5| Plan to Rapidly Expand Interconnections – Preapproval Pilot

In the Company's 8-3-20 Letter, the Company agreed to this proposal, in sum, as follows:

> The Company is exploring a near-term, 6-month Preapproval Pilot on selected circuits on O'ahu, Maui Island, and Hawai'i Island. Under certain parameters, contractors could begin the installation of systems without Company approval and subsequently provide documentation. While additional external and internal discussion is needed to resolve some of the challenges associated with this option, the Company is open to further vetting this option with the Parties.[14]

Through extensive discussions with the Parties, the Company proposes the Preapproval Pilot design as follows:

***Phase 1***

- Twelve-month pilot from date of launch to provide immediate benefit to customers during the COVID-19 crisis.
- Company identifies all circuits on O'ahu, Maui, and Hawai'i Island with 30% or greater available Hosting Capacity eligible for participation in the Preapproval Pilot.
    - Excluded from the pilot are those circuits that are identified as 4 kV and 2.5 kV circuits regardless of available Hosting Capacity.
    - Circuit eligibility will be provided through the Company's Locational Value Map (LVM) located at the following URL: https://www.hawaiianelectric.com/clean-energy-hawaii/integration-tools-and-resources/locational-value-maps

[14] 8-3-20 Letter at 3-4.

- Company reserves the right to close any circuit identified as a preapproval circuit to participants if it believes that the circuit can no longer be managed without first evaluating projects prior to installation. If projects can demonstrate that a building permit was initiated prior to the closure of the circuit, then the project will be allowed to be included as part of the Preapproval Pilot.

- Project participation will require the following conditions in addition to compliance with Rule 14H and all other applicable program rules:
  - Program system size limited to 25 kW or less.
  - Activation of Volt-Watt for the life of the project in addition to current Advanced Inverter setting requirements.
  - Advanced Metering where identified by the Company for voltage monitoring and data.
  - Applications must be submitted via the Company's online application tool, Customer Interconnection Tool ("CIT").
    - The customer's contractor shall submit either an application in CIT or notify the Company that the customer intends to interconnect under the Preapproval Pilot upon City and County Building permit initialization and payment by emailing the following documents: Completed Customer Authorization & Acknowledgement Form, proof that a Photovoltaic City and County building permit has been initiated and paid for at the customer's address, and a screen shot of the customer's address entered into LVM displaying that the address is on a

Preapproved Pilot circuit. Once notification is received by the Company or an application is submitted through CIT, the Company will initiate the revenue meter change.

- If the PV system is installed prior to the application submittal, a complete application that includes all required drawings and a validation packet if available should be submitted as attachments to expedite the interconnection process.
- The Company will not make any modifications to CIT in order to continue processing all other applications submitted on circuits that are not eligible for the Preapproval Pilot. Therefore, preapproval customers will continue to receive all standard communications to include a formal conditional approval upon passing the completeness review step.

- All projects will be required to pass Completeness Review and Validation steps; some projects may require secondary distribution upgrades to be completed by the Company prior to energization. Customers will continue to be responsible for any costs associated with contractor/electrician work to build infrastructure (lateral work, ducts, handholes, weatherheads, metering equipment, etc.) to support any requested service upgrades.
- Non-compliance at any stage of the interconnection process would result in disqualification from the pilot program.

***Later Phases***

- If the Preapproval Pilot is effective, the potential to expand the pilot into other circuits with less available hosting capacity may be possible if contractors adhere to the program rules and can demonstrate project compliance throughout the pilot.

Expected benefits of the Preapproval Pilot are as follows:

- Customer satisfaction
  - Customers will not have to wait for projects to be evaluated before building and can complete the interconnection application process even after installation of their system.
- Faster interconnection process
  - Customers with preapprovals may choose to build and install their system prior to submitting an interconnection application. Thus, projects when submitted via CIT will represent the actual system as-built, removing the need for revisions if the project is built in accordance with all applicable interconnection rules.
  - Applications when initially submitted via CIT may be processed through the validation step, reducing repeated application submittals. The current process requires that a customer submit an initial application, receive conditional approval, and then submit a validation packet. Through the Preapproval Pilot, this may be done in one submission.
  - Added rooftop PV projects installed on circuits with the most amount of circuit hosting capacity availability.

## Section II: Program Track Update

This section provides an update on the Company's progress on developing a Rooftop Rental Demonstration and Programmatic Grid Service Options. The initial steps for both efforts have been to learn from similar implementations in other jurisdictions and provide a roadmap to test and implement longer term solutions.

### 1| Rooftop Rental Demonstration

The Rooftop Rental Program as proposed in the DER Program Track is intended to expand opportunities to install cost-effective DER by making more rooftops available, and to provide opportunities to underserved customer segments, specifically low-moderate income ("LMI") customers and renters, to manage and lower their electric bills. Specifically, this program would expand DER benefits to customers who may lack the means to finance or provide the upfront investment costs for a rooftop PV system. The Company also continues to investigate offering immediate financial relief through fixed monthly bill credits to renters rather than to homeowners through this program.

In this Status Update, the Company summarizes the experiences of other utilities who have implemented a similar rental program, and identifies steps and tasks leading up to the filing of a full-scale application by mid-year 2021. The Company also discusses its plans to conduct a demonstration or "initial assessment" phase, with the following objectives:

- Assess and demonstrate the level of customer interest in this program model, including delivery and pricing, and the related benefit to participating customers;
- Assess and demonstrate the level of DER market interest in this business model and the market's ability to execute in a coordinated manner with the Companies for a positive customer experience;

- Determine the cost-effectiveness of the program (based on the market's responses and actual performance on execution costs and grid services potential (kW)); and
- Assess and demonstrate the option to incorporate resilience benefits for host customers.

Conducting the demonstration will be critical to developing a full-scale program application.

### A. Examples of Utility-Owned Rooftop Rental Programs

The following utilities have installed utility-owned PV systems on residential properties. In each case, the systems were interconnected directly to the grid (in front of the meter). The Company has reached out to all three of the following utilities and they have all been very supportive and helpful to the Company's program development. The Company will continue to discuss with these utilities their experience in areas such as budgeting, valuation, and how they calculate fixed monthly bill credits.

**Arizona Public Service ("APS")**

APS has developed and implemented several utility-owned solar programs. The following programs are full and are no longer accepting new applications. APS utilizes solar technicians to operate and maintain the PV systems in their Solar Partner and Solar Communities Programs, and has utilized local solar companies to install and uninstall systems as needed. APS also utilizes their staff to support their programs and their call center to manage customer inquiries.

#### i. Solar Partner Program

APS installed 4 kW to 8 kW PV systems on over 1,500 residential customers' roofs. APS hired local solar companies to install the systems, while APS owns, operates, and maintains

them. The participant receives a monthly $30 bill credit over the program's life of twenty years. This program is open to renters with permission from their property owners.

ii. Solar Communities Program

Subsequently, APS launched its Solar Communities Program in 2017. This initiative focuses on LMI customers through three different segments: residential, non-residential, and multifamily.

- Residential: Open to LMI residential customers. APS installs 2 kW to 10 kW PV systems on customer rooftops. The participant receives a monthly bill credit of $30. This program was designed to be open to renters with permission from their property owners.
- Non-residential: Open to customers that serve the limited-income population, including Title I schools, nonprofits, rural governments, and rural municipalities. APS installs a 50 kW or larger PV carport (about 20 parking spots). The participant's monthly bill credit is dependent on the size of the system, credited at $2.50/kW.
- Multifamily: Open to multifamily housing complexes that serve the limited-income population. At least 50% of the tenants need to meet the income requirements, and all units must be individually metered. APS installs a 50 kW or larger solar carport. The housing complex receives a $1,000 annual bill credit, while tenants receive a $15 monthly bill credit.

**Entergy New Orleans ("Entergy")**

Entergy hired local solar companies to install PV systems on 100 residential properties. Participants receive a $30 monthly bill credit over the life of the program of twenty years. This program required the eligible properties to be owner-occupied. Preference was given to

customers that self-identified as LMI customers. Entergy managed customer acquisition and inquiries but did not conduct income verification due to administrative costs. They are no longer accepting applications but may expand their program in the future depending on installation costs and feasibility.

**Los Angeles Department of Water and Power ("LADWP")**

LADWP is installing 1 kW to 10 kW PV systems on 300 to 400 residential properties. Their program is capped at 1 MW and targets areas with low solar penetration. Depending on the PV system size, participants receive a monthly bill credit of $20 to $50. LADWP did not have income requirements, but required eligible properties to be owner-occupied. LADWP also expanded their program to include battery systems. Depending on the battery system size (kW), participants receive a monthly bill credit of $5 to $20. Instead of hiring local solar companies, LADWP trained existing staff to inspect, design, install, and maintain their PV systems.

Table 1 below summarizes the different rooftop rental programs by the three utilities. While the Company will apply the development and lessons learned from their experience, a key difference between the programs in other jurisdictions and the one the Company is pursuing is that the Company's program contemplates the addition of energy storage to the system such that the system could deliver a wider array of grid services, i.e., beyond the delivery of energy.

| **Name** | **Arizona Public Service** | **LADWP** | **Entergy New Orleans** |
|---|---|---|---|
| Utility Type | IOU | POU | POU |
| | | | |
| Program Name | Solar Partner | Solar Rooftops Program | Res. Rooftop Solar Program |
| Active/Closed | Closed | Active | Closed |
| Program Size (participants) | 1,500-1,600 | 300-400 | 100 |
| Participant Type | Residential | Residential | Residential |

| | | | |
|---|---|---|---|
| Income Requirement | None | None. Targets areas with low solar penetration. | Preference to LMI customers. |
| Occupancy Requirement | Open to renters and homeowners | Owner-occupied | Owner-occupied |
| | | | |
| Program Capacity | 10 MW | 1 MW | |
| Avg PV Capacity | 4-8 kW | 1-10 kW | |
| | | | |
| Incentive Type | Monthly Bill Credit | Monthly Bill Credit | Monthly Bill Credit |
| Incentive Amount | $30 | $20-$50 for PV<br>$5-$20 for ESS | $30 |
| Program Fees | - | - | - |
| | | | |
| Installer | Local solar company | Trained internal staff | Local solar company |

Table 1: Summary of the Utility-Owned Rooftop Rental Programs

### B. Identified Steps to Full-Scale Application Filing

This section identifies the demonstration as well as other key tasks and efforts that will drive the development of the full-scale application that is targeted to be filed with the Commission by June 4, 2021.

***Step 1: Submit Notice to Commission***

*Target Date January 20, 2021*

Prior Commission precedent requires the Company to address certain issues in order to implement a Rooftop Rental Program. Specifically, almost 15 years ago, on January 27, 2006, the Commission issued Decision and Order No. 22248 ("D&O 22248") in Docket No. 03-0371, which addressed the Company's ability to participate in the customer-sited distributed generation market in Hawai'i. D&O 22248 established that, to do so, the Company must demonstrate that: (a) the proposed distributed generation project would resolve a legitimate system need, (b) it is the least cost alternative to meet that need, and (c) in an open and competitive process acceptable to the Commission, the customer-generator was unable to find another entity ready and able to

supply the proposed distributed generation service at a price and quality comparable to the utility's offering.[15]

Through the early demonstration phase, the Company plans on assessing the potential of a fully scaled Rooftop Rental Program, and developing the justification to meet the Commission's three-prong test for utility-ownership of customer-sited DER in D&O 22248.[16] This will be a key component of the full-scale application filing. In the interest of proceeding expediently with the demonstration and to ensure transparency with the process, the Company will submit notice to the Commission and Parties in this proceeding when the Company starts procuring the roughly five to twenty DER systems needed for this small demonstration. The Company will file this notice no later than January 20, 2021.

***Step 2: RFP for DER and Aggregation Issued***

*Target Date January 25, 2021*

To maintain an open and competitive process, the Company will issue the Request for Proposal ("RFP") required to identify the DER system(s) and its headend system to control the DER by January 25, 2021. The initial assessment RFP will seek the installation of five to twenty DER systems and the headend system for the duration of two months.[17] The RFP will provide information on the three grid services (Fast Frequency Response, Capacity Load Build, and Capacity Load Reduction) that the DER systems are expected to deliver and the Open ADR2.0b certification requirement for the headend system to connect to the Company's Demand Response Management System. The Company expects selections from the RFP to be completed by March

[15] D&O 22248, Ordering Paragraph No. 2 at 46.
[16] The Company believes that D&O 22248 should not be interpreted to prohibit the Company from proceeding – with prior notice to the Commission – with a demonstration effort to help it gather information to subsequently address the D&O 22248 requirements if and when it seeks approval to implement a full Rooftop Rental Program. Certainly, the DER market has developed and become sufficiently established in Hawai'i since 2006 such that a demonstration project would not present any potential harm to the market that D&O 22248 intended to address.
[17] The Company is currently considering a 4 kW/14 kWh system.

1, 2021. Depending on the outcome, the Company may select multiple vendors for this effort. The Company will partner with the selected independent contractor(s) to implement and maintain the proposed program. Partners will provide a "white label" turn-key solution on behalf of the Company.

***Step 3: Documentation of Program Rules and Terms & Conditions***

*Target Date March 1, 2021*

By March 1, 2021, the Company will complete the first iteration of Program Rules and its Terms & Conditions to be used for the first five to twenty systems upon installation during the initial assessment. The installation is intended to be performed just for the initial assessment phase with the intent of migrating over to a full-scale program upon Commission approval. If the Company does not proceed or does not receive Commission approval for a full-scale program, the five to twenty systems will be removed from the customers' sites. The Program Rules and Terms & Conditions will be further refined leading up to the final proposal filing on May 3, 2021.

***Step 4: Process Documentation for Interconnection and Metering***

*Target Date June 4, 2021*

Initial assessment participants will go through the normal interconnection process, through the Customer Interconnection Tool ("CIT"). These are the types of processes that need to be documented to ensure transparency that Rooftop Rental customers are receiving the same treatment in the interconnection process as all other DER customers. The design of the CIT process does not need to be completed by the final proposal filing in May 2021, but does need to be fully vetted by the application filing in June 2021. Similarly, the Company needs to assess the type of metering solution that would be installed in these DER systems. The Company will

assess the use of a Company meter or a vendor's data management system through feedback from the other utilities who have experience with similar programs and through the demonstration RFP responses and actual implementation.

***Step 5: Initial Assessment***

*Target Date June 4, 2021*

To meet the Commission's standard in D&O 22248, the Company will have to show that this solution is the least cost alternative offer, so the Rooftop Rental Program will need to be cost-effective. In the RFP for the initial assessment, the Company will request pricing for both the demonstration and for a full-scale program to understand pricing at scale. The Company will assess the reasonableness of the full-scale pricing based on the vendor's actual delivery in the demonstration and discussions with the vendor regarding the underlying assumptions for economies of scale. This full-program pricing will be used to determine whether this program approach can be cost-effective for all customers.

While the Company has theoretical assumptions, it does not possess the actual data to verify how many kWs a single system could deliver for each grid service, especially for a system that is directly connected to the grid. Actual observed data will be used to scale a program and calculate the grid service valuation. To be consistent, the Company will apply the same value of services amount from the recent Grid Services RFP.[18] The goal is to operate these resources comparably to a utility-scale resource, providing additional value to the Company by enabling maximum flexibility (i.e., more kW) for the Company to dispatch the resource. Regarding the valuation of energy, the Company has proposed its cost-effectiveness approach in its Program

[18] RFP No. 103119-02 issued on August 22, 2019. (*See* https://www.hawaiianelectric.com/products-and-services/demand-response/rfp-for-grid-services-from-customer-sited-distributed-energy-resources.)

Track Updated Proposal filing,[19] and is evaluating the National Standard Practice Manual received from the DER Parties as well as a similar cost-effectiveness document from the Sacramento Municipal Utility District. All three approaches will be reviewed and considered in preparation for the Final Proposal filing in the Program Track in May 2021. The various cost-effectiveness analyses will ultimately be the basis in setting an effective monthly bill credit amount for participating customers. The Company will complete the analysis and provide this monthly amount in the final proposal filing in May 2021, and will provide details of the analysis in the application in June 2021.

***Step 6: Identify Market Potential***

*Target Date June 4, 2021*

One additional success metric for the initial assessment is the identification of market potential for this Rooftop Rental Program. Census data presented by UHERO shows that the rental market includes more than 100,000 single family homes on O'ahu.[20] It is assumed that most of these homes do not have DER systems, so that would be the high end of the potential. The Company is focused on working and collaborating with government agencies, housing authorities, and non-profit organizations serving the LMI community in launching this program. By partnering with such organizations, the Company could limit its marketing and customer acquisition costs for the full-scale program and focus on delivery. The Company also believes this approach does not impede the current existing market. Upon completion of the first full-scale program, the Company could then look into extending the program further into the rental market. The tiered approach also ensures the grid services would be available over multiple years and not a single timeframe of twenty years.

[19] *See Company's Program Track Updated Proposal*, filed on August 26, 2020, in Docket No. 2019-0323.
[20] *See* https://uhero.hawaii.edu/the-august-rental-market-struggling-tenants-and-rising-vacancies/.

During this market potential analysis in performing the initial assessment, the Company will also be able to analyze the roof size and home space potential to have varying offerings of PV and storage sizes to maximize the grid service potential. Furthermore, the Company will collaborate with Hawaii Energy to ensure the customer site visit is coordinated, includes energy efficiency offerings, and brings as much value as possible to customers. Hawaii Energy has succeeded in this type of collaboration model and outreach with aggregators.

***Step 7: Analyze Possibility of Adding Resiliency to the Program***

*Target Date June 4, 2021*

Similar to other rooftop rental programs, the Company's proposal is to interconnect directly to the grid (in front of the meter). However, unlike the other programs, this proposed program would include an interconnected storage system. Given the storage component, while not a mandatory requirement of the program, the Company is interested in pursuing an approach that adds resiliency to the home during a power outage. The concept is if the DER system detects that there is no frequency on the grid, then it would direct the generated energy back into the customer's home until the outage is restored. The Company will investigate if this could be done with the DER system or through metering, and whether additional hardware/software will be required for this concept to be achieved.

***Step 8: Full-Scale Application Filing***

*Target Date June 4, 2021*

Upon successful completion of Steps 1 through 7 in the first half of 2021, the Company will file its full-scale application with the Commission, requesting program and cost recovery approval. At the upcoming monthly meetings approved by the Commission in the amended procedural schedule, the Company will provide updates on its progress on each of these steps.

## 2| Programmatic Grid Service Options

### A. Grid Service Tariff Structure

The Commission's *Policy Statement and Order on Demand Response Programs*, filed on April 28, 2014 in Docket No. 2007-0341 ("DR Policy Statement") directed the Company to "undertake, immediately and expeditiously, an overhaul of their existing [DR] programs by (1) consolidating those programs into a single integrated [DR] portfolio, (2) establishing appropriate overall objectives and goals for the integrated portfolio, as well as each individual program within the portfolio, and (3) developing and utilizing appropriate standards to measure the performance of, and the overall benefits achieved by, the integrated portfolio and each individual program within the portfolio."[21] Notably, the DR Policy Statement also provided guidance to the Company to evaluate if and to what extent that, "third party agents and aggregators could or should be used as a means to design, market, and manage one or more of the demand response programs effectively and efficiently."[22] The Companies' initial response to the Policy Statement was a proposed Integrated Demand Response Portfolio Plan ("IDRPP").[23] The IDRPP introduced a number of concepts into the Company's Demand Response ("DR") design process, of note, defining the types of ancillary or grid services demand-side programs could deliver as a combined portfolio that provided a "higher level of operational flexibility so as to support, among other things, integration of additional renewable resources, such as solar and wind."[24] The IDRPP perpetuated the concept that the Company would need to evaluate acquiring grid services by either contracting with a third-party agent or an aggregator.

[21] DR Policy Statement at 84.
[22] *Id.* at 107.
[23] *See* Hawaiian Electric Companies' Integrated Demand Resource Portfolio Plan, filed on July 28, 2014, in Docket No. 2007-0341.
[24] *See* DR Policy Statement at 4.

Subsequently, several updates to the IDRPP were filed, which led to the Companies' Revised DR Portfolio.[25] In its Revised DR Portfolio, the Company proposed a grid service framework that would provide opportunities for customers to install DER and actively participate in programmatic grid service options. Customers would be compensated by way of either rates or incentive-based programs directly with the Company. Where feasible, the Company would control a customer's equipment directly, or contract with a third party such as an aggregator or a grid service provider. Both of these models are described in more detail below.

### B. Aggregator Model

As noted in the Revised DR Portfolio, a "firm" contract with an aggregator has committed MWs with monthly payments and punitive measures for non-performance.[26] An aggregator provides all aspects of the grid service delivery value chain, from recruitment and enrollment of customers, through enablement and the ongoing management of the customer, grid service delivery, measurement and verification, and settlement calculations. As proposed in the Revised DR Portfolio, the Company has proceeded with first procuring grid services with aggregators via the Grid Service Purchase Agreement ("GSPA").

### C. Grid Service Provider Model

The Revised DR Portfolio also defines a "services" model where a grid service provider[27] typically offers a $/kW payment scheme, with no firm commitment at a lesser payment for these "non-firm" services.[28] The Company had envisioned proceeding with the procurement process

[25] *See* Hawaiian Electric Companies' Revised Demand Response Portfolio ("Revised DR Portfolio"), filed on February 10, 2017 in Docket No. 2015-0412.
[26] *See* Revised DR Portfolio, Exhibit 1 at 31.
[27] The term "grid service provider" is referred to in the IDRPP as a "third-party agent" and in the Revised DR Portfolio as a "third-party service provider."
[28] *See* Revised DR Portfolio, Exhibit 1 at 31.

discussed in the Revised DR Portfolio, which proposed to test the grid service provider model that is utility-administered after first testing the aggregator GSPA procurement model.

Subsequently, in this proceeding, the DER Parties expressed interest in a programmatic acquisition option for grid services, sometimes referred to as a Bring Your Own Device ("BYOD") program.[29] In traditional utility-administered, aggregator, and grid service provider (including BYOD) models, the customer owns the DER enabled to provide grid services. The Company's existing DR programs includes grid service delivery whereby residential and commercial customers enroll their DER[30] at no cost because the Company typically covers all the cost for enablement. The resource availability of the DER is compensated through a monthly payment to the customer.

After review of the BYOD example described in the DER Parties' Initial Proposal, and examination of examples in other jurisdictions discussed below, the Company's understanding is that BYOD is in essence within the confines of the Grid Service Provider model. More specifically, the Company considers BYOD options analogous to a Grid Service Provider program that covers a one-time enablement cost inclusive of customer-owned equipment upgrades. The Company has implemented such a model in the past for the commercial sector and is willing to develop a residential solution that is cost-effective and equitable to all customers.

### D. Examples of BYOD

The Company has gathered preliminary information on jurisdictions that have grid service programs that cover enablement costs, also labeled as BYOD programs. These examples

[29] *See* DER Parties' Initial Proposals and Comments of Hawai`i Solar Energy Association, Hawai'i PV Coalition, and Distributed Energy Resources Council in the DER Program Track ("DER Parties' Initial Proposal"), filed on June 30, 2020, at 26-27.

[30] DR resources (e.g., water heaters, air conditioners, etc.) may provide grid services.

are summarized in Attachment 1 and are ripe for discussion in this proceeding as the Parties take the next steps to develop new programmatic grid service options specifically for residential customers.

### E. Identified Steps to Develop a Programmatic Grid Service Option

As the Company continues to develop its proposal for a programmatic grid service option, these are the steps the Company foresees it needs to take next:

***Step 1: Analyze CER Market Survey Results***

On October 28, 2020, the Company issued a Customer Energy Resources Services and Technology Market Update Survey ("CER Market Survey"). The purpose of the survey is to understand the DR and DER market for services and/or technology to inform the Company's DER programmatic filing for customer grid services program(s) in 2021 that provides customers with: (1) a program for all customer building types, including residential rentals and condos; (2) options to provide multiple end device participation; and (3) participation in multiple CER grid services, all with minimal customer touch points.

The CER Market Survey requests information on the following topics: (a) the type of communication between the customer's DER and Hawaiian Electric's backend system, (b) vendor hardware and cyber security, (c) options to upgrade software on the vendor's hardware, (d) the types of end devices that vendors can control and measure, (e ) the types of demand response services the responder provides, and the types of grid services they can participate in. At the time of this Program Track Status Update filing, the Company is still analyzing the results of the CER Market Survey and will share the final results in this proceeding.

***Step 2: Develop RFP for Grid Service Providers***

Decision and Order No. 35238 ("D&O 35238"), issued on January 25, 2018 in Docket No. 2015-0412, approving the Company's Revised DR Portfolio states:

> The Companies' proposal is commendable for its intent to establish, consistent with past commission guidance, a new market for aggregated DR services and to take advantage of the ability of innovative third-parties to deploy new customer-sited solutions. The commission notes that both the HECO Companies and third-party service providers have expressed interest in getting programs underway and improving over time, rather than delaying implementation to develop more formal market structures. The commission supports this approach and emphasizes the need to continue implementation in order to gain invaluable experiential learning for iterative program improvement.[31]

The Company has been moving forward on the implementation of the Revised DR Portfolio, and thus far, has issued two rounds of RFPs to procure grid services. One GSPA has been approved by the Commission and two are pending approval. The Company's plan in this proceeding is to collaborate with the Parties and continue to fully develop the approach to a programmatic grid service solution.

Results of the CER Market Survey are expected to provide valuable information to support the Company's future RFPs to identify service providers that are capable of meeting the specific requirements to be defined in the topic areas discussed above. Ideally, the results of the

[31] D&O 35238 at 66.

CER Market Survey will provide essential input for the Company to devise a method to create and validate a preferred grid service device list.

***Step 3: Conduct Cost-effectiveness Analysis***

As with all of the Company's applications that pertain to acquisition or maintaining grid service programs, the cost-effectiveness of what the Company has presented as a BYOD needs to be analyzed and included in any future proposal that includes a Grid Service Provider acquisition/implementation model. The analysis will assist with setting the appropriate amount of enablement and incentive amount to maintain cost-effectiveness of the programmatic solution being proposed.

## Conclusion

The Company will continue to engage with the DER Parties and Consumer Advocate to address the challenges and details of the initiatives included in this Status Update. A number of the topics covered in this Status Update may be ripe for discussion during the Commission's monthly meetings in the Program Track or the Company's frequent meetings with the Parties. The Company appreciates this opportunity to report on the progress made thus far and the next steps to move forward.

## Examples of Programs with Upfront Customer Incentives

| **Program Name**<br><br>*Utility / ISO* | **BYOD**<br><br>*Green Mountain Power* | **Cool Rewards & Rush Hour Rewards**<br><br>*Arizona Public Service Electric* | **Storage Rewards**<br><br>*Arizona Public Service Electric* | **Reserve Reward"**<br><br>*Arizona Public Service Electric* | **Energy Wise Rewards**<br><br>*PEPCO* | **Battery Program**<br><br>*National Grid* |
|---|---|---|---|---|---|---|
| Ownership | Customer | Customer | Utility | Customer | Customer | Customer |
| Contract period | 10 years | 1 season | 10 years | Life of the water heater | Information not available | 5 years |
| Device(s) | Battery | Thermostat | Battery | Heat Pump Water Heater | Thermostat | Battery using inverters |
| Approved Device Brands | SolarEdge<br>Sonnen<br>Sunverge Tesla<br>Generac | ***Cool Rewards:***<br>Alarm.com<br>Ecobee<br>Emerson<br>Honeywell<br>Radio Thermostat Company<br>Vivint<br><br>***Rush Hour Rewards:***<br>NEST | Sunverge | Rheem | Ecobee<br>Emerson<br>Honeywell<br>NEST | SolarEdge<br>Tesla<br>Outback<br>Generac/Pika |
| Comms | Customer internet | Customers internet | Customers internet | Information not available | Customer internet | Customer internet |
| Performance | +/- 10% of customer enrolled capacity, or perform in self-consumption | Allowed to opt-out via mobile app | Information not available | Information not available | Allowed to opt-out by changing their smart thermostat. | See incentives |
| Event | "Peak Event" is anticipated to happen 5-8 times a month, 3-6 hours duration, 4 hour ahead notice of the event | June 1 – sept 30, 3 pm to 8 pm, increase temp to decrease load at peak, up to 20 events and 2hr events | Load Shift times | Load Shift times | Peak reduction June-Oct. Typically, can expect 5 or less events per year. | Jun – Sep:<br>2pm - 7pm<br>Up to 60 events/yr<br>Max 3hrs/event<br><br>Dec – Mar:<br>2pm - 7pm<br>Up to 5 events<br>Max 3hrs/event |

| **Program Name**<br><br>*Utility / ISO* | **BYOD**<br><br>*Green Mountain Power* | **Cool Rewards & Rush Hour Rewards**<br><br>*Arizona Public Service Electric* | **Storage Rewards**<br><br>*Arizona Public Service Electric* | **Reserve Reward"**<br><br>*Arizona Public Service Electric* | **Energy Wise Rewards**<br><br>*PEPCO* | **Battery Program**<br><br>*National Grid* |
|---|---|---|---|---|---|---|
| Backend | Equipment monitoring platform(s) and web-based management services that GMP utilizes | Customer uses vendors portal, but Utility connects to EnergyHub | EnergyHub | EnergyHub | Information not available | Information not available |
| Backup / Resiliency | Yes | Information not available | Yes, available for power outage for lights/refrigerator. | Information not available | Information not available | Yes |
| Customer Participation Fees | $3.97 monthly integration and communication fee, $6.67 monthly communication fee for SolarEdge StorEdge Inverters | None | None | None | None | None |
| Incentives | Up to $10,500 **Back up Only Option**: 1) One-time incentive of $850 per kW (up to 10 kW) available for a minimum of 3 hours, or 2) $950 per kW (up to 10 kW) available for a minimum of 4 hours. 3) Additional $100 installed as a stand-alone or paired with pre-existing solar in a constrained | One-time $50 enrollment bill credit per thermostat and annual $25 participation bill credit per thermostat before event season. | One-time $500 participation bill credit so utility can study impact of using battery storage for load shift.<br><br>Must participate in TOU program (Saver Choice plans) | Rebate on water heater plus install, Up to $6,000<br><br>Must participate in TOU program (Saver Choice plans) | Demand Response: $8/month for June-Oct. Up to $40.<br><br>Energy Efficiency: $100 rebate on an ENERGY STAR certified smart thermostat. | Summer: $225/ kW<br><br>Winter: $50/kW<br><br><u>Rules</u><br>kW is average event curtailed/season. Cannot use solar production to increase battery discharge rate. |

| **Program Name**<br><br>*Utility / ISO* | **BYOD**<br><br>*Green Mountain Power* | **Cool Rewards & Rush Hour Rewards**<br><br>*Arizona Public Service Electric* | **Storage Rewards**<br><br>*Arizona Public Service Electric* | **Reserve Reward"**<br><br>*Arizona Public Service Electric* | **Energy Wise Rewards**<br><br>*PEPCO* | **Battery Program**<br><br>*National Grid* |
|---|---|---|---|---|---|---|
| | areas of GMP grid<br>**Self-Consumption Option**: One time $850 to self-consume for duration of the peak event. $100 extra if installed as a stand-alone or paired with pre-existing solar in curtained constrained areas of the GMP grid. | | | | | |
| Customer Penalties | $12.70 per kW per month, until access is restored. | None | None | None | None | None |

**References:**

**Green Mountain Power**
https://greenmountainpower.com/wp-content/uploads/2020/11/BYOD-Customer-Agreement-11-2-20.pdf
https://greenmountainpower.com/rebates-programs/home-energy-storage/bring-your-own-device/battery-systems/

**Arizona Public Service**
https://www.aps.com/en/About/Sustainability-and-Innovation/Technology-and-Innovation/Cool-Rewards
https://www.aps.com/-/media/APS/APSCOM-PDFs/About/Sustainability-and-Innovation/Technology-and-Innovation/Cool-Rewards/SmartThermostatList.ashx?la=en&hash=1566E86848B4D2C9DF2A58C0ECC053C7
https://www.aps.com/en/About/Sustainability-and-Innovation/Technology-and-Innovation/Storage-Rewards
https://www.aps.com/en/About/Sustainability-and-Innovation/Technology-and-Innovation/Reserve-Rewards

**Pepco**
https://homeenergysavings.pepco.com/smart-thermostat-savings

**National Grid**
https://www.nationalgridus.com/MA-Home/Connected-Solutions/BatteryProgram

CERTIFICATE OF SERVICE

I hereby certify that on this date, a copy of the foregoing document, together with this Certificate of Service, were duly served upon the following parties as set forth below:[1]

| Party | Email | Hand Delivery | U.S. Mail |
|---|---|---|---|
| Dean Nishina<br>Executive Director<br>Division of Consumer Advocacy<br>Department of Commerce and Consumer Affairs<br>335 Merchant Street, Room 326<br>Honolulu, Hawaii 96813<br><br>dnishina@dcca.hawaii.gov<br>consumeradvocate@dcca.hawaii.gov | 1 | | |
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| Robert D. Harris<br>Hawaii PV Coalition<br>437 Keolu Drive<br>Kailua, Hawaii 96734<br><br>robert.harris@sunrun.com | 1 | | |

[1] As stated in Order No. 37043, *Setting Forth Public Utilities Commission Emergency Filing and Service Procedures related to COVID-19* (non-docketed), issued on March 13, 2020, at 11:

> Service of all documents filed by any parties, participants, utilities, stakeholders and/or other entities or individuals shall be via email. All entities making filings before the commission will be required to supply an email address that can be used for service. Any Certificates of Service for docketed or other matters that previously had listed the entity's name and the physical address where a document was served via first-class mail, shall instead reflect the entity's representative's name, entity name, email address where served, as well as the date of service.

| Party | Email | Hand Delivery | U.S. Mail |
|---|---|---|---|
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DATED: Honolulu, Hawai‘i, December 4, 2020.

/s/ Kyle Kawata
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HAWAIIAN ELECTRIC COMPANY, INC.